A CENTURY OF CONSERVATION
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Montana Fish, Wildlife & Parks

May 10, 2001

1420 East 6th Ave.
P.O. Box 200701
Helena, MT 59620-0701

Environmental Quality Council
Montana Department of Environmental Quality
Montana Department of Fish, Wildlife and Parks
Fisheries Division
Endangered Species Coordinator
Nongame Coordinator
Native Species Coordinator, Fisheries
Bozeman Office
MT Environmental Information Center
Montana Audubon Council
State Historic Preservation Office
Park County Conservation District, Route 62, Box 3197, Livingston, MT 59047
Sweet Grass County Conservation District, P.O. Box 749, Big Timber, MT 59011
U.S. Army Corp of Engineers, Helena
U.S. Fish and Wildlife Service, Helena
Montana State Library, Helena
Joe Brooks Chapter, Trout Unlimited, P.O. Box 1378, Livingston, MT 59047
Mr. Charlie Pierson, Highland Livestock Company, 356 Frontage Road East, Livingston, MT 59047
Bureau of Land Management – Water Rights, P.O. Box 3680, Billings, MT 59107
Greeley Creek Ranch, P.O. Box 1018, Livingston, MT 59047
Oregon Valley Ranch, c/o Bonnie Quigley, P.O. Box 1236, Livingston, MT 59047
Eric Schneider, 455 Barstow Road, Prince Frederick, MD 20678
WW Mac Ranch, LLC – Please Forward, c/o Jeans Fork Cattle Company, 111 Jack Street, Billings, MT 59101

Ladies and Gentlemen:

Please find enclosed an Environmental Assessment prepared for a Future Fisheries Project tentatively planned to improve in-stream flows in lower Locke Creek, a tributary to the Yellowstone River located near the town of Springdale.

Park

Please submit any comments that you have by 5:00 P.M., June 14, 2001 to:

Montana Department of Fish, Wildlife and Parks
Locke Creek Instream Flow Project
P.O. Box 200701
Helena, MT 59620-0701

Completion of this proposed project is contingent upon approval of both a "Change" application and a water use permit application by the Montana Department of Natural Resources and Conservation, as well as approval of the water lease agreement by the Fish, Wildlife and Parks Commission.

If you have any questions, feel free to contact me at (406) 444-2432.

Sincerely,

Mark Lere, Program Officer
Habitat Protection Bureau
Fisheries Division
e-mail: mlere@mt.state.us

ENVIRONMENTAL ASSESSMENT
Fisheries Division
Montana Fish, Wildlife and Parks
Locke Creek Irrigation Conversion and Water Leasing Project

General Purpose: The 1995 Montana Legislature enacted statute 87-1-272 through 273 that directs the Department to administer a Future Fisheries Improvement Program. The program involves physical projects to restore degraded fish habitat in rivers and lakes for the purposes of improving wild fisheries. The legislature established a funding account to help accomplish this goal. Additionally, the 1999 Montana Legislature amended statute sections 87-1-273, 15-38-202 and Section 5, Chapter 463, Laws of 1995 to create a bull trout and cutthroat trout enhancement program. The program calls for the enhancement of bull trout and cutthroat trout through habitat restoration, natural reproduction and reductions in species competition by way of the Future Fisheries Program.

Montana's water leasing statute (85-2-436, MCA) was enacted by the 1989 legislature as HB 707. The 1999 legislature broadened this leasing program by extending the term of the program until 2009, allowing for a longer lease term and increasing the number of stream reaches that can be leased from. This leasing program is a pilot program that allows Montana, Fish, Wildlife and Parks (MFWP) to lease water rights from willing individuals who have traditionally used the water for diversionary purposes.

This project is being proposed to undertake a water conservation project with the Highland Livestock Company. Highland Livestock Company would meet their irrigation needs by obtaining a new water use permit for a groundwater well. This well would pump enough water to sprinkler irrigate approximately 50 acres previously irrigated from surface water in Locke Creek. In turn, the Highland Livestock Company would lease their surface water rights on Locke Creek to MFWP for the purpose of in-stream flow. Highland Livestock Company currently uses about 1.5 cubic feet per second (cfs) of surface water for irrigation purposes. As a result, this project is expected to provide an additional 1.5 cfs of in-stream flow to Locke Creek during the irrigation season (period of low stream flow).

I. Location of Project: This project will be conducted on Locke Creek, a tributary to the Yellowstone River, located approximately 5 miles southwest of the town of Springdale within Township 2 South, Range 11 East, Section 1 in Park County (see Figure 1).

II. Need for the Project: One goal within Montana Fish, Wildlife and Parks six-year operations plan for the fisheries program is to "restore and enhance degraded habitats" by implementing habitat restoration projects and administering the Future Fisheries Improvement Program to restore important habitats on public and private lands. This proposed project would help achieve this goal.

Tributary dewatering in the upper Yellowstone drainage has been shown to be an important, if not major factor regulating numbers of adult cutthroat trout in the Yellowstone River. Yellowstone cutthroat trout have been designated as a "species of special concern" in Montana because of shrinking distribution and declining numbers.

Lower Locke Creek, a tributary to the Yellowstone River near the town of Springdale, is used by native

Yellowstone cutthroat trout for spawning and rearing. However, reproduction in this reach of stream is adversely impacted by seasonal dewatering from irrigation withdrawal. Hennessey (1998a and 1998b and Roulson 2000) trapped emigrating cutthroat trout fry in lower Locke Creek from 1996 to 1998. Her data indicate a positive correlation between fry production and average daily flow during the summer period. Hennessey collected 1,844 fry during 1997 when the daily flow in Locke Creek averaged slightly greater than 3 cfs during the summer. In contrast, Hennessey collected only 6 fry in Locke Creek in 1998 when the daily flow averaged less than 1.5 cfs. In 1996, fry collections and associated flow rates were intermediate to those in 1997 and 1998. This relationship suggests that increases in summer flows in lower Locke Creek could increase recruitment of cutthroat trout to the Yellowstone River.

The intent of this proposed project is to improve in-stream flows and remove migration barriers in lower Locke Creek to enhance spawning and rearing habitat for Yellowstone cutthroat trout. Genetic analysis has shown that cutthroat trout in lower Locke Creek are slightly introgressed with rainbow trout (<3%). Ultimately, the project is intended to increase the number of adult cutthroat trout in the Yellowstone River.

III. Scope of the Project: The proposal calls for providing payment to the Highland Livestock Company to partially cover costs associated with drilling a groundwater well into an aquifer not hydrologically connected to the surface waters of Locke Creek, installing a submersible pump and installing a wind powered turbine. The turbine would be connected to the power grid and would be used to offset energy costs associated with the pump. This well would pump enough water to sprinkler irrigate approximately 50 acres previously irrigated with surface water in Locke Creek. In exchange, the Highland Livestock Company would lease their surface water rights on Locke Creek to MFWP for the purpose of in-stream flow. Highland Livestock Company currently controls all of the irrigation rights claimed on Locke Creek. These irrigation rights total 9.5 cfs. By pumping groundwater, Highland Livestock Company will meet all of their irrigation needs and will not need to divert water from Locke Creek. The ranch currently uses about 1.5 cubic feet per second (cfs) of surface water for irrigation purposes. As a result, this project is expected to provide an additional 1.5 cfs of in-stream flow to Locke Creek during the irrigation season (period of low stream flow). Under this proposal, MFWP would pay $45,000.00 to the Highland Livestock Company to lease their irrigation rights on Locke Creek for a period of 30 years.

Currently, a diversion structure located approximately 0.15 miles above the mouth of Locke Creek acts as a fish migration barrier. Implementation of this project would result in the removal of this barrier, opening an additional 0.35 miles of spawning and rearing habitat. With adequate flows and the removal of the migration barrier, Locke Creek could be expected to recruit approximately 10,000 cutthroat fry annually to the Yellowstone River.

Although all parties have reached general agreement over this water lease, the lease cannot be implemented until a "Change in Appropriation Water Rights" application is approved by the Department of Natural Resources and Conservation (DNRC). Additionally, this project cannot be implemented until Highland Livestock Company obtains a valid water use permit for the proposed use of groundwater. Any water user who feels they would be effected by this lease or this new water use permit have an opportunity to object to both the "Change" and the new permit. This project cannot be implemented until all objections have been resolved if, in fact, any objections are received. The lease period would begin the first complete irrigation season following the date a "Change" application is approved by DNRC. Additionally, all MFWP water lease agreements must be approved by the Fish, Wildlife and Parks Commission.

The project is expected to cost $73,000.00. Of this total, the Future Fisheries Improvement Program would be contributing up to $45,000.00.

IV. Environmental Impact Checklist:

Please see attached checklist.

V. Explanation of Impacts to the Physical Environment:

1. Terrestrial and aquatic life and habitats.

There will be no adverse impacts to fish as a result of the proposed project. Implementation of this project would provide approximately 1.5 cfs of additional flow in lower Locke Creek and would remove a fish migration barrier, opening an additional 0.35 miles of spawning and rearing habitat. With adequate flows and the removal of the migration barrier, Locke Creek could be expected to recruit approximately 10,000 cutthroat fry annually to the Yellowstone River. Ultimately, the number of adult cutthroat trout would be expected to increase in the Yellowstone River.

Installation of a wind-powered turbine may result in some propeller caused mortality for passerine birds and resident raptors (especially fledging golden eagles). This additional mortality would be minor, however, and is not expected to adversely impact these resident bird populations.

2. Water quantity, quality and distribution.

No changes in drainage pattern or natural surface run-off would occur as a result of the proposed project. However, there would be a change in the amount of in-stream flow found in the lower 0.15 miles of creek during the irrigation season.

Short-term increases in turbidity may occur during removal of the fish barrier. To minimize turbidity, construction will occur during a low flow period and operation of equipment in the stream channel will be minimized to the extent practicable. The Department of Environmental Quality will be contacted to determine narrative conditions required to meet short-term water quality standards and protect aquatic biota. A 310 permit will be obtained from the local Conservation District and the U.S. Army Corp of Engineers will be contacted for requirements needed to meet the federal Clean Water Act (404 permit).

4. Vegetation cover, quantity and quality.

A small patch of vegetation (<800 square feet) will be disturbed as a result of well drilling and the installation of the wind turbine. All disturbed areas would be re-seeded with native vegetation upon completion of construction. Riparian vegetation along the lower 0.15 miles of Locke Creek would benefit by the proposed project because an additional 1.5 cfs of water would remain in-stream during the irrigation season, providing more water for the well-being of hydrophyllic plants.

5. Aesthetics.

Aesthetics would be enhanced by augmenting stream flow in the lower 0.15 miles of Locke Creek. In contrast, aesthetics of the area would be adversely impacted as a result of the installation of a wind powered turbine.

7. Unique, endangered, fragile, or limited environmental resources.

Yellowstone cutthroat trout are native to Montana and are classified as a "Species of Special Concern" because of their shrinking distribution and declining numbers. Tributaries are the only documented habitat that river-resident Yellowstone cutthroat trout use for spawning and rearing in the upper Yellowstone drainage. Persistent dewatering in a majority of these tributaries appears to be a leading factor regulating numbers of adult cutthroat trout in the Yellowstone River. Lower Locke Creek receives limited use for spawning and rearing by cutthroat trout. Genetic analysis has shown that at least some of these fish are slightly hybridized with rainbow trout. The intent of this project is to improve in-stream flows and remove a migration barrier in lower Locke Creek to improve spawning and rearing habitat for Yellowstone cutthroat trout.

Several species of raptors are known to occur within the proposed project area. Wind powered turbines, if sited within flight lanes, can result in significant mortality to these birds. To minimize the potential for propeller caused mortality, the wind-powered turbine proposed for this project will be sited outside of flight pathways used by migrating hawks and eagles (based on a site visit by Dr. Al Harmata, Montana State University). There remains a potential for propeller caused mortality for resident raptors, specifically fledging golden eagles.

8. Demands on environmental resources of land, water, air and energy.

Highland Livestock currently diverts water from Locke Creek via a 25 horse power rotary pump. A 20 horse power pump would be used to activate the well. As a result, energy use associated with pumping water should remain similar when the ranch switches to a groundwater pump as proposed.

9. Historic and archaeological sites

The proposed project may require an individual Army Corp of Engineers (COE) 404 permit. Therefore, the State Historic Preservation Office will be contacted to determine the need for compliance with the federal historic preservation regulations. The project will not begin until a cultural clearance is granted.

VI. Explanation of Impacts on the Human Environment.

4. Agricultural or industrial production.

There are no anticipated adverse impacts to agricultural production as a result of the proposed project. The proposed change from a surface water withdrawal to a groundwater withdrawal will not substantially change the amount of irrigated acreage.

7. Access to & quality of recreational activities.

It is anticipated that augmenting in-stream flow in lower Locke Creek would improve overall aquatic habitat and, as a result, would improve recruitment of cutthroat trout to the Yellowstone River.

12. Demands for energy.

Energy use associated with pumping groundwater will be more efficient than the current surface water pump due to a reduction in pump size. Installation of a wind-powered turbine would produce enough energy to power the pump and provide excess energy to the power grid. As a result, this proposed project would generate more energy than would be consumed.

VII. Discussion and Evaluation of Reasonable Alternatives.

1. No Action Alternative

If no action is taken, the lower 0.15 miles of Locke Creek will continued to be dewatered during the irrigation season in both average and low flow years. Additionally, a fish migration barrier will continue to block passage for another 0.35 miles of stream. Locke Creek will continue to produce limited number of cutthroat trout fry. As a result, the full potential for providing recruitment of juvenile cutthroat trout will not be realized.

2. The Proposed Alternative

The proposed alternative is designed to augment in-stream flows in the lower 0.15 miles of Locke Creek. In addition, the project calls for the removal of a fish migration barrier, opening an additional 0.35 miles of spawning and rearing habitat for Yellowstone cutthroat trout. This alternative would be expected to improve fish and wildlife habitat in Locke Creek and to increase the Yellowstone cutthroat trout population both in the stream and the Yellowstone River.

3. Alternatives considered but not recommended

Other means of increasing in-stream flows in Locke Creek are not feasible at this time for the following reasons:

- There are no existing or planned water storage projects within the Locke Creek drainage.
- Montana Law prevents the purchase of water rights for in-stream flows.
- To our knowledge, there are no other water rights in the Locke Creek drainage available for leasing.

VIII. Environmental Assessment Conclusion Section

1. Is an EIS required? No.

We conclude from this review that the proposed activities will have a positive impact on the physical and human environment.

2. Level of public involvement.

The proposed project was reviewed and supported by the public review panel of the Future Fisheries Improvement Program. The proposed project also has been reviewed and approved by the Fish, Wildlife and Parks Commission.

Before this project can be implemented, the water lease and water use permit must be approved by DNRC. MFWP will be submitting a "Change" application to DNRC that will be publicly noticed in local newspapers. The Highland Livestock Company will be submitting an application for a water use permit to DNRC that also will be publicly noticed in the local newspapers. Any objections to the "Change" or the water use permit must be resolved before approval by DNRC. These applications will be denied by DNRC if the lease or water use permit are found to adversely affect the water rights of other users in the basin.

The Environmental Assessment (EA) is being distributed to all individuals and groups listed on the cover letter. The EA also will be published on Montana Fish, Wildlife and Parks web page: fwp.state.mt.us.

3. Duration of comment period?

Public comment will be accepted through 5:00 P.M. on June 14, 2001.

4. Person responsible for preparing the EA.

Mark Lere, Program Officer
Habitat Protection Bureau
Fisheries Division
Montana Department of Fish, Wildlife and Parks
1420 East 6th Avenue
Helena, MT 59620

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REFERENCES

Hennessey, L.E. 1998a. An evaluation of Yellowstone cutthroat trout

fry recruitment related to water leases on four tributaries of the Yellowstone River. Master's thesis. Montana State University, Bozeman, Montana.

Hennessey, L.E. 1998b. An evaluation of Yellowstone cutthroat trout fry recruitment related to water leases on four tributaries of the Yellowstone River. Report to Montana Fish, Wildlife and Parks by the Montana Cooperative Fisheries Unit, Montana State University, Bozeman, Montana.

Roulson, L.H. 2000. Water leases and Yellowstone cutthroat trout fry outmigration from four tributaries of the Upper Yellowstone River. Report by Garcia and Associates, Bozeman, Montana prepared for Montana Fish, Wildlife and Parks, Helena, Montana.

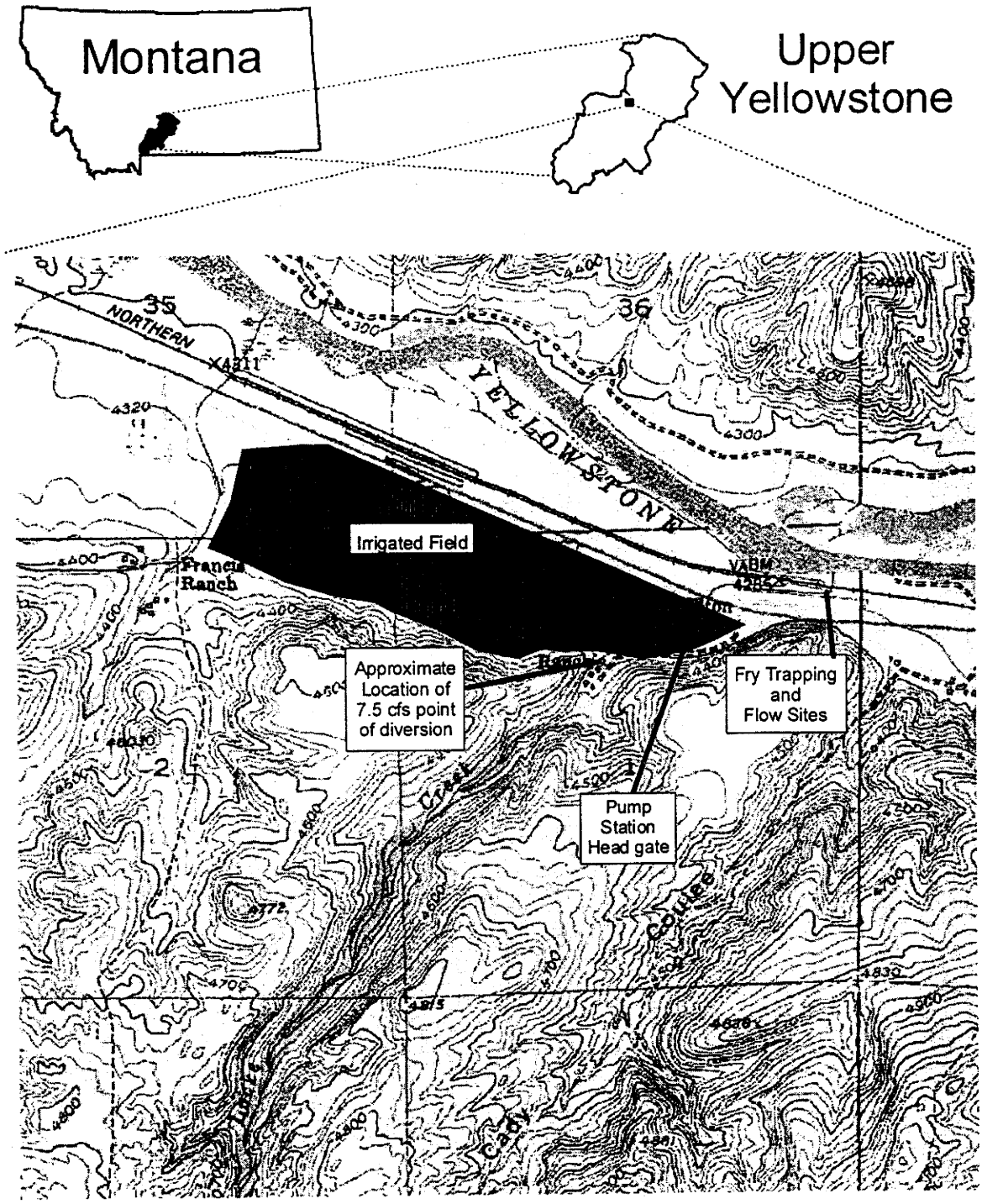

Figure 1. Map of lower Locke Creek showing approximate locations of existing pump station head gate, point of diversion for 7.5 cfs right, irrigated field, fry trapping site, and flow gauge station.

MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS
1420 E 6th Ave, PO BOX 200701, Helena, MT 59620-0701
(406) 444-2535

ENVIRONMENTAL ASSESSMENT

Project Title Locke Creek Irrigation Conversion and Water Leasing Project

Division/Bureau Fisheries Division-Future Fisheries Improvement

Description of Project This project is being proposed to undertake a water conservation project with the Highland Livestock Company. The ranch would meet their irrigation needs by obtaining a water use permit for groundwater and installing a well. In exchange, the ranch would lease their surface water rights on Locke Creek to MFWP for the purpose of in-stream flow. The proposed project is located on property owned by Highland Livestock Company located approximately 5 miles southwest of the town of Springdale.

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

	MAJOR	MODERATE	MINOR	NONE	UNKNOWN	COMMENTS ON ATTACHED PAGES
1. Terrestrial & aquatic life and habitats			X			X
2. Water quality, quantity & distribution			X			X
3. Geology & soil quality, stability & moisture				X		
4. Vegetation cover, quantity & quality			X			X
5. Aesthetics			X			X
6. Air quality				X		
7. Unique, endangered, fragile, or limited environmental resources			X			X
8. Demands on environmental resources of land, water, air & energy				X		X
9. Historical & archaeological sites				X		X

POTENTIAL IMPACTS ON THE HUMAN ENVIRONMENT

	MAJOR	MODERATE	MINOR	NONE	UNKNOWN	COMMENTS ON ATTACHED PAGES
1. Social structures & mores				X		
2. Cultural uniqueness & diversity				X		
3. Local & state tax base & tax revenue				X		
4. Agricultural or industrial production				X		X
5. Human health				X		
6. Quantity & distribution of community & personal income				X		
7. Access to & quality of recreational and wilderness activities			X			X
8. Quantity & distribution of employment				X		
9. Distribution & density of population & housing				X		
10. Demands for government services				X		
11. Industrial & commercial activity				X		
12. Demands for energy			X			X
13. Locally adopted environmental plans & goals				X		
14. Transportation networks & traffic flows				X		

Other groups or agencies contacted or which may have overlapping jurisdiction Montana Department of Natural Resources and Conservation,

Park County Conservation District, US Fish and Wildlife Service, US Army Corp of Engineers, Montana Department of Environmental Quality, State Historical Preservation Office

Individuals or groups contributing to this EA: Brad Shepard, MFWP; Kathleen Williams, MFWP

Recommendation concerning preparation of EIS: No EIS required.

EA prepared by: Mark Lere

Date: May 10, 2001